



2013 MRS
**SPRING MEETING
 & EXHIBIT**

April 1–5, 2013
 San Francisco, California

CALL FOR PAPERS

Abstract Deadline: November 1, 2012

www.mrs.org/spring2013

REMINDER: In fairness to all potential authors, late abstracts will not be accepted.

MRS Symposium D: From Molecules to Materials—Pathways to Artificial Photosynthesis

The molecular design of novel bio-inspired materials is a cutting-edge research area with great expectations to contribute greatly to emergent challenges connected with exponentially growing societal demands for clean energy. In the last five-seven years, an area of research at the intersection of materials chemistry, physical and biological sciences, and nanotechnology known as *artificial photosynthesis* has been a subject of intense attention. The final goal of such multidisciplinary efforts is to engineer advanced materials with tunable photophysical properties capable of converting solar energy to chemical energy of fuels with high performance. The building blocks for such advanced energy conversion systems are based on naturally abundant, inexpensive, and stable inorganic (e.g., semiconductors or oxide materials) and bio-organic (e.g., dyes, light harvesting complexes, and hydrogenases) components. Introduction of nanostructured materials into the artificial photosynthetic complexes gave an additional thrust to this field. Therefore, an interdisciplinary focus of this symposium will be on different aspects of artificial photosynthesis systems from molecules to materials and hybrid systems toward functional devices. The symposium is anticipated to bring together world-recognized experts and will be greatly appreciated by the community working on this subject; it would further expand the interest and progress in this area.

Session topics will include:

- Nano-bio hybrid systems
- From natural photosynthesis to engineered architectures
- Supramolecular assemblies
- Inorganic models and theory
- Charge transfer across interfaces
- From solar hydrogen to liquid fuels
- CO₂ sequestration
- Photo-electrochemical systems
- *In-situ* and operando analysis of materials
- Lifetime and degradation
- Utilization of self-assembly
- Integration into devices

A “Young Scientists Tutorial” complementing this symposium is tentatively planned. Further information will be included in the MRS Program that will be available online in January.

Invited speakers include:

Edwin Constable (Univ. of Basel, Switzerland), **Heinz Frei** (Lawrence Berkeley National Lab), **Jinghua Guo** (Lawrence Berkeley National Lab), **Hiroshi Imahori** (Kyoto Univ., Japan), **Nathan S. Lewis** (California Inst. of Technology), **Thomas Moore** (Arizona State Univ.), **Oleg Poluektov** (Argonne National Lab), **Patrick Schmuki** (Univ. of Erlangen, Germany), **Hiroshi Segawa** (Univ. of Tokyo, Japan), **Stenbjörn Styring** (Uppsala Univ., Sweden), **John Turner** (National Renewable Energy Lab), **Gary Wiederrecht** (Argonne National Lab), **Peidong Yang** (Univ. of California, Berkeley).

Symposium Organizers

Elena A. Rozhkova

Argonne National Laboratory
 Center for Nanoscale Materials
 Bldg. 440, 9700 S. Cass Ave., Argonne, IL 60439-4806
 Tel 630-252-2863, Fax 630-252-5739, rozhkova@anl.gov

Artur Braun

EMPA
 Swiss Federal Laboratories for Materials Science and Technology
 Laboratory for High Performance Ceramics
 Überlandstr. 129, CH-8600 Dübendorf, Switzerland
 Tel 41-58-765-4850, Fax 41-58-765-4150, artur.braun@empa.ch

Ana Moore

Arizona State University
 Dept. of Chemistry and Biochemistry
 Box 871604, Tempe, AZ 85287-1604
 Tel 480-965-2953, Fax 480-965-2747, amoores@asu.edu

Katsuhiko Ariga

National Institute for Materials Science (NIMS)
 MANA
 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan
 Tel 81-29-860-4597, Fax 81-29-860-4832, ariga.katsuhiko@nims.go.jp